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January 17, 2007

Mr. John J. Doll
Commissioner for Patents
Post Office Box Box 1450
Alexandria, VA 22313-1450

Re: Supplemental Response to September 5, 2006 Notice, with Renewed Demand for USPTO Rescission of Such Notice in U.S. Patent Application No. 10/767,107
Title: HYDROGEN STORAGE SYSTEMS AND FUEL CELL SYSTEMS WITH HYDROGEN STORAGE CAPACITY
IPTL File: 4172-121

Dear John:

Enclosed for your review is a copy of the Supplemental Response to the September 5, 2006 Notice, with Renewed Demand for USPTO Rescission of Such Notice in the above-identified U.S. patent application, and Appendix A, which is a copy of the September 10, 2006 Demand for Immediate Rescission.

Please review this matter and take appropriate action to ensure that PTO Legal Instrument Examiners do not cause unreasonable burdens on applicants for responses clearly compliant with requirements of 37 CFR 1.121 and MPEP 714.

Sincerely,

INTELLECTUAL PROPERTY/
TECHNOLOGY LAW

Steven J. Hultquist

SJH:bao

Enclosures

121 Doll Ltr01

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re United States Patent Application of:		Docket No.:	4172-121
Applicant:	Ray R. Fishraghi et al.	Examiner:	Chuo, Tony S.H.
Application No.:	10/767,107	Art Unit:	1746
Date Filed:	January 28, 2004	Confirm. No.:	4423
Title:	HYDROGEN STORAGE SYSTEMS AND FUEL CELL SYSTEMS WITH HDYROGEN STORAGE CAPACITY	Customer No.:	23448

FACSIMILE TRANSMISSION CERTIFICATE
ATTN: Examiner Tony S.H. CHUO
Fax No. (571) 273-8300

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Number of Pages

Barbara Owens
Barbara Owens

January 17, 2007
Date

DOCUMENTATION OF JANUARY 17, 2007 TELECONFERENCE WITH EXAMINER TONY CHUO CONCERNING SEPTEMBER 5, 2006 NOTICE OF NON-COMPLIANT AMENDMENT; SUPPLEMENTAL RESPONSE TO SAID NOTICE, WITH RENEWED DEMAND FOR U.S.P.T.O. RESCISSION OF SUCH NOTICE

Commissioner for Patents
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PAGE 1/34 * RCVD AT 1/17/2007 2:28:00 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/29 * DNIS:2738300 * CSID:9194199354 * DURATION (mm-ss):13-19

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re United States Patent Application of:		**Docket No.:**	**4172-121**
Applicant:	**Ray R. Eshraghi et al.**	**Examiner:**	**Chuo, Tony S.H.**
Application No.:	**10/767,107**	**Art Unit:**	**1746**
Date Filed:	**January 28, 2004**	**Confirm. No.:**	**4423**
Title:	**HYDROGEN STORAGE SYSTEMS AND FUEL CELL SYSTEMS WITH HDYROGEN STORAGE CAPACITY**	**Customer No.:**	**23448**

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Abbreviations:
HS: Host send
HR: Host receive
WS: Waiting send
PL: Polled local
PR: Polled remote
MS: Mailbox save
MP: Mailbox print
CP: Completed
FA: Fail
TU: Terminated by user
TS: Terminated by system
RP: Report
G3: Group 3
EC: Error Correct

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re United States Patent Application of:		**Docket No.:**	**4172-121**
Applicant:	**Ray R. Eshraghi et al.**	**Examiner:**	**Chuo, Tony S.H.**
Application No.:	**10/767,107**	**Art Unit:**	**1746**
Date Filed:	**January 28, 2004**	**Confirm. No.:**	**4423**
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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This documents a January 17, 2007 teleconference with Examiner Tony Chuo concerning the status of this application. On September 5, 2006 a Notice of Non-Compliant Amendment was issued by the U.S.P.T.O., characterizing applicant's Amendment filed August 28, 2006 in response to the May 26, 2006 Office Action as being non-compliant in character.

On September 10, 2006, a Notice to the September 5, 2006 Notice of Non-Compliant Amendment was submitted, in which it was pointed out that the Notice of Non-Compliant Amendment had been issued in error, at odds with the proper requirements of 37 C.F.R. 1.121 and MPEP 714.

The Legal Instruments Examiner therefore was in error, and it was demanded that the September 5, 2006 Notice be rescinded in favor of consideration on the merits of the prior response. For the sake of good order, a "true and exact" copy of such September 10, 2006 demand for rescission is enclosed.

It was stated to Examiner Chuo on January 17, 2007 that despite the error of the U.S.P.T.O., which appears not to have been resolved insofar as Examiner Chuo was concerned, a supplemental response would be filed, in which withdrawn claims 31-34, 36, 41 and 44 were specified in status identifiers as "(Withdrawn-Currently Amended)." This is an alternative optional status identifier, since it is fully proper under the applicable rules and MPEP provisions to amend a withdrawn claim that is identified only with the status identifier "(Withdrawn)."

Accordingly, please amend the specification as set out in **Section I (Amendments to the Specification)** beginning on the following page.

Please amend the claims as set out in **Section II (Amendments to the Claims)** beginning on page 6 hereof.

Remarks concerning such amendments are set out in **Section III (Remarks)** beginning on page 13 hereof.

Section I: (Amendments to the Specification)

Please amend the specification as set out below.

1. Please replace original paragraphs [0075] through [0077] of the specification with the following new replacement paragraphs [0075] through [0077]:

[0075] The interstices between the microtubular elements **36** at their shell sides are filled with a sorbent material **38** having sorptive affinity for the target gas for sorptively carrying the same. Such sorbent material **38** is limited only to the body portion **32B** of the housing **32**, by the potting member **33**, and the tubular walls and the enclosed ends of the microtubular elements **36**, and therefore will not enter into the headspace [[**32B**]] **32A** in the event that the housing **32** is turned upside down.

[0076] The target gas that is sorptively carried by the sorbent material **38** can diffuse from such sorbent material in the body portion **32B** through the tubular walls of the microtubular elements **36** into the bore sides thereof, as shown in **FIG. 3B**, which can subsequently enter into the headspace [[**32B**]] **32A** and be dispensed from the valve head **34** for downstream usage. The sorbent material **38** is advantageously kept in the body portion **32B** and will not enter into either the bore sides of the microtubular elements **36** or the headspace [[**32B**]] **32A** to block the gas passages, regardless of the direction in which the housing **32** is placed, i.e., either upstanding, upside-down, or reclined.

[0077] Moreover, when the sorbent material **38** is exhausted, it can be recharged with the target gas, by connecting the valve head **34** to a target gas source, and pressure can be applied so as to enhance the speed of such recharging process. The recharged target gas enters into the headspace [[**32B**]] **32A** from the valve head **34**, and then into the bore sides of the microtubular elements **36**. The porous, gas-permeable tubular walls of the microtubular elements **36** provide increased diffusion surface to allow diffusion of the recharged target gas from the bore sides of the microtubular elements 36 into the sorbent material **38** at the shell sides therethrough, as shown in **FIG. 3C**.

2. Please replace original paragraphs [0083] and [0084] with the following new replacement paragraphs [0083] and [0084]:

[0083] The interstices between the microtubular elements **46** at their shell sides in the body portion **42B** are filled with a liquid carrier material **48** that carries the target gas. Such liquid carrier material **48** is limited only to the body portion **42B** of the housing **42**, by the potting member **43**, and the liquid-impermeable tubular walls, and the enclosed ends of the microtubular elements **46**, and therefore will not leak into the headspace [[**42B**]] **42A** in the event that the housing **42** is turned upside down.

[0084] The target gas that is carried by the liquid carrier material **48** can be released therefrom through the gas-permeable tubular walls of the microtubular elements **46** into the bore sides thereof, as shown in **FIG. 4B**, which can subsequently enter into the headspace [[**42B**]] **42A** and be dispensed from the valve head **44** for downstream usage. The liquid carrier materials **48**, however, is kept in the body portion **42B** and will not leak into either the bore sides of the microtubular elements **46** or the headspace [[**42B**]] **42A** regardless of the direction in which the housing **42** is placed.

3. Please replace original paragraphs [0095] and [0096] with the following new replacement paragraphs [0095] and [0096]:

[0095] **FIG. 6A** shows an individual microtubular element as immersed in the liquid hydrogen carrier [[**54**]] **53**. Such microtubular element comprises a single-layer tubular wall **56'** made of a gas-permeable and liquid-impermeable material, which is preferably a microporous, hydrophobic polymeric material selected from the group consisting of polypropylenes, polyethylenes, polyurethanes, polymethylpentenes, polytetrafluoroethylenes, etc. Hydrogen gas **64** can diffuse through the tubular wall **56'** of such microtubular element and enter into the bore side thereof, while the liquid hydrogen carrier **53** cannot and therefore is limited only to the shell side thereof.

[0096] **FIG 6B** shows another individual microtubular element as immersed in the liquid hydrogen carrier [[**54**]] **53** which comprises a double-layer tubular wall having an outer layer **56"** made of a structural material that is both gas- and liquid-permeable, and an inner layer **57** made of a membrane material that is gas-permeable but liquid-impermeable.

Please replace original paragraph [0148] with the following new replacement paragraph [0148]:

[0148] The hydrogen carrier material can alternatively be stored at the shell side of the microfibrous fuel cells. **FIG. 17** shows a compact fuel cell assembly [[**260**]] **280** that comprises a bed of hydrogen-sorbent

material [[**263**]] **283** and multiple microfibrous fuel cells [[**264**]] **284** dispersed therein. Hydrogen gas is supplied by such bed of hydrogen-sorbent material [[**263**]] **283** at the shell side of each microfibrous fuel cell, while an oxidant, such as oxygen gas or air, can be supplied through a lumen at the bore side of each microfibrous fuel cell.

Section II: (Amendments to Claims)

Please amend claims 1, 4, 7, 11, 12, 18, 31-34, 36, 41 and 44; cancel claims 15 and 40, and add new claims 49 and 50, as set out in the following listing of claims 1-50:

1. (Currently Amended) A storage and dispensing system for storing and dispensing a target gas, comprising:

(a) a housing comprising a gas collection compartment and a gas storage compartment;

(b) a plurality of microtubular elements disposed in said housing i) having one or more open ends in fluid communication with either the gas collection compartment or the gas storage compartment and ii) extending from said compartment with which it is in fluid communication and into the other compartment, wherein each of said microtubular elements comprises a tubular wall permeable to the target gas and defining a bore side and a shell side; ~~, and wherein the bore side of each of said microtubular elements is sealed from the shell side thereof; and~~

(c) a seal which, together with the tubular walls, sealingly isolates the gas collection compartment from the gas storage compartment; and

(d) a carrier material for said target gas, wherein said carrier material is disposed in said gas storage compartment, which may be on ~~housing and at~~ either the bore sides or the shell sides of said microtubular elements.

2. (Original) The storage and dispensing system of claim 1, wherein the carrier material for said target gas is disposed at the bore sides of said microtubular elements.

3. (Original) The storage and dispensing system of claim 2, wherein the carrier material for said target gas comprises at least one sorbent material having sorptive affinity for the target gas.

4. (Currently Amended) The storage and dispensing system of claim 3, wherein said sorbent material comprises a physical sorbent [[and/or]], a chemisorbent, or both.

5. (Original) The storage and dispensing system of claim 3, wherein the target gas comprises hydrogen, and wherein the sorbent material comprises at least one hydrogen-sorbent.

6. (Original) The storage and dispensing system of claim 5, wherein said at least one hydrogen-sorbent comprises a material selected from the group consisting of metal hydride alloys, carbonaceous materials, zeolites, silica gels, amorphous metal compositions, and molecular sieves.

7. (Currently amended) The storage and dispensing system of claim 2, wherein the tubular walls of said microtubular elements are also liquid ~~not~~ permeable ~~to the target gas~~.

8. (Original) The storage and dispensing system of claim 2, wherein the carrier material for said target gas comprises a liquid carrier material.

9. (Original) The storage and dispensing system of claim 8, wherein the target gas comprises hydrogen, and wherein the liquid carrier material comprises at least one material selected from the group consisting of liquefied hydrogen, organic hydrogen solvents, and metal hydride solutions.

10. (Original) The storage and dispensing system of claim 1, wherein the carrier material for said target gas is disposed at the shell sides of said microtubular elements.

11. (Currently amended) The storage and dispensing system of claim [[11]] 10, wherein the carrier material comprises at least one sorbent material having sorptive affinity for the target gas.

12. (Currently amended) The storage and dispensing system of claim 11, wherein said at least one sorbent material comprises a physical sorbent, [[and/or]] a chemisorbent, or both.

13. (Original) The storage and dispensing system of claim 11, wherein the target gas comprises hydrogen, and wherein the sorbent material comprises at least one hydrogen-sorbent.

14. (Original) The storage and dispensing system of claim 13, wherein said at least one hydrogen-sorbent comprises a material selected from the group consisting of metal hydride alloys, carbonaceous materials, zeolites, silica gels, amorphous metal compositions, and molecular sieves.

15. (Cancelled)

16. (Original) The storage and dispensing system of claim 10, wherein the carrier material for said target gas comprises a liquid carrier material.

17. (Original) The storage and dispensing system of claim 16, wherein the target gas comprises hydrogen, and wherein the liquid carrier material comprises at least one material selected from the group consisting of liquefied hydrogen, organic hydrogen solvents, and metal hydride solutions.

18. (Currently amended) The storage and dispensing system of claim 17, wherein the seal comprises ~~microtubular elements are potted at one or more ends by~~ one or more potting members at or proximate to the one or more open ends of said microtubular elements on ~~so that~~ the bore sides of said microtubular elements, ~~are sealed from the shell sides thereof by said one or more potting members in~~ and providing a leak-tight seal ~~manner~~, wherein said one or more potting members, said tubular walls, and said housing define: (1) at least one liquid compartment for holding said liquid carrier material, and (2) at least one hydrogen collection compartment separated from said liquid compartment in a leak-tight manner, wherein said microtubular elements extend from said liquid compartment to said hydrogen collection compartment, so that the shell sides of said microtubular elements at least partially contact the liquid carrier material in the liquid compartment, and that the bore sides of said microtubular elements are in fluid communication with said hydrogen collection compartment, and wherein the housing comprises at least one hydrogen outlet connected to said hydrogen collection compartment for dispensing hydrogen gas therefrom.

19. (Original) The storage and dispensing system of claim 18, wherein the tubular walls of the microtubular elements comprise a membrane material that is gas-permeable but liquid-impermeable.

20. (Original) The storage and dispensing system of claim 19, wherein said membrane material comprises a microporous, hydrophobic polymeric material.

21. (Original) The storage and dispensing system of claim 18, wherein the tubular walls of the microtubular elements comprises a first layer of structural material that is gas- and liquid-permeable, and a second layer of membrane material that is gas-permeable but liquid-impermeable.

22. (Original) The storage and dispensing system of claim 18, wherein the liquid carrier material comprises at least one metal hydride solution.

23. (Original) The storage and dispensing system of claim 22, wherein the metal hydride solution comprises $NaBH_4$.

24. (Original) The storage and dispensing system of claim 23, wherein the metal hydride solution comprises $NaBH_4$ at a concentration in a range of from about 10% to about 35% by total weight of said solution, and wherein the metal hydride solution further comprises sodium hydroxide at a concentration in a range of from about 2% to about 4% by total weight of said solution.

25. (Original) The storage and dispensing system of claim 22, further comprising a catalyst-based hydrogen release control mechanism associated with the liquid compartment.

26. (Original) The storage and dispensing system of claim 22, further comprising a pH-based hydrogen release control mechanism associated with the liquid compartment.

27. (Original) The storage and dispensing system of claim 22, further comprising a water supply for controllably adding water to the liquid compartment.

28. (Original) The storage and dispensing system of claim 27, arranged and configured for supplying hydrogen gas to a downstream hydrogen fuel cell assembly for generation of electrical energy, wherein said hydrogen fuel cell assembly comprises a water management mechanism for removing water generated during the electrochemical reaction from said assembly, and wherein

the water supply of said storage and dispensing system is connected to the water management mechanism of the hydrogen fuel cell assembly, so that the water generated by said hydrogen fuel cell assembly is controllably added to the liquid compartment of the storage and dispensing system.

29. (Original) The storage and dispensing system of claim 22, wherein each of the tubular walls of said microtubular elements comprises a first layer of a catalyst material, a second layer of a membrane material that is gas-permeable but liquid-impermeable, and a third layer of a structural material that is gas- and liquid-permeable.

30. (Original) The storage and dispensing system of claim 22, wherein the tubular wall of each microtubular element is impregnated with a catalyst material and has a coating of a membrane material that is gas-permeable but liquid-impermeable on an inner surface thereof.

31. (Withdrawn-Currently Amended) A hydrogen generation catalyst structure[[,]] comprising a microtubular element comprising a hydrogen gas permeable tubular wall defining a bore side and a shell side and an immobilized hydrogen generation catalyst ~~material and a plurality of microtubular elements in contact therewith, wherein each of said microtubular elements comprises a tubular wall defining a bore side and a shell side, and wherein the bore side of each of said microtubular elements is sealed from the shell side thereof~~.

32. (Withdrawn-Currently Amended) The hydrogen generation catalyst structure of claim 31, wherein the gas permeable tubular wall a) is also liquid permeable and has impregnated therein the hydrogen generation catalyst material or b) comprises two or more layers, including a bore side layer and a shell side layer, at least one said bore side or shell side layers being liquid permeable and having contained therein the hydrogen generation catalyst ~~is impregnated in the tubular walls of the microtubular elements~~.

33. (Withdrawn-Currently Amended) The hydrogen generation catalyst structure of claim 31, wherein the gas permeable tubular wall is also liquid permeable and the hydrogen generation catalyst material is disposed at the bore ~~sides~~ side of the microtubular ~~elements~~ element.

34. (Withdrawn-Currently Amended) The hydrogen generation catalyst structure of claim 31, further comprising a plurality of said microtubular elements and a housing[[,]] in which the plurality of microtubular elements ~~and the hydrogen generation catalyst material~~ are disposed, wherein ~~the hydrogen generation catalyst material is either impregnated in the tubular walls of the microtubular elements or disposed at the bore sides thereof, wherein~~ the microtubular elements are potted at one or more ends by one or more potting members, so that the bore sides of said microtubular elements are sealed from the shell sides thereof by said one or more potting members in a leak-tight manner, wherein said one or more potting members and said housing define a first liquid compartment and a second liquid compartment separated from each other in a leak-tight manner, wherein said microtubular elements extend from said first liquid compartment to said second liquid compartment, so that the bore sides of said microtubular elements are in fluid communication with the first liquid compartment, and the shell sides of said microtubular elements are in fluid communication with the second liquid compartment, wherein fluid flows between the first and the second liquid compartments by diffusing through the tubular walls of the microtubular elements, wherein one of the first and the second liquid compartments is connected to a fluid inlet, and the other is connected to a fluid outlet.

35. (Withdrawn) The hydrogen generation catalyst structure of claim 34, wherein the first liquid compartment is connected to a fluid inlet for introducing a metal hydride solution thereinto, wherein the second liquid compartment is connected to a fluid outlet, so that the metal hydride solution flows from the first liquid compartment into the bore sides of the microtubular elements, through the tubular walls thereof, to the shell sides of said microtubular elements, and being collected in said second liquid compartment, during which the metal hydride solution comes into contact with the immobilized hydrogen generation catalyst material in said microtubular elements for generation of hydrogen gas, and is then discharged from the fluid outlet.

36. (Withdrawn-Currently Amended) A microfibrous fuel cell structure, comprising:

a hollow fibrous membrane separator defining a shell side and a bore side;
an inner current collector at the bore side of said hollow fibrous membrane separator;
an inner electrocatalyst layer at the bore side of said hollow fibrous membrane separator;
an outer current collector at the shell side of said hollow fibrous membrane separator;
an outer electrocatalyst layer at the shell side of said hollow fibrous membrane separator; and

a hydrogen supply structure at the bore side of said hollow fibrous membrane separator, which hydrogen supply structure comprises i) a microtubular element comprising a hydrogen gas permeable tubular membrane defining a bore side and a shell side and ii) a carrier material for hydrogen gas disposed at the bore side of said tubular membrane.

37. (Withdrawn) The microfibrous fuel cell structure of claim 36, wherein the carrier material comprises at least one hydrogen-sorbent.

38. (Withdrawn) The microfibrous fuel cell structure of claim 37, wherein said at least one hydrogen-sorbent is selected from the group consisting of metal hydride alloys, carbonaceous materials, zeolites, silica gels, amorphous metal compositions, and molecular sieves.

39. (Withdrawn) The microfibrous fuel cell structure of claim 36, wherein said hydrogen supply structure further comprises a fluid path within said carrier material, to allow passage of hydrogen gas therethrough.

40. (Cancelled)

41. (Withdrawn-Currently Amended) The microfibrous fuel cell structure of claim [[40]] 36, wherein the gas permeable tubular membrane of said hydrogen supply structure comprises a porous polymeric membrane material.

42. (Withdrawn) The microfibrous fuel cell structure of claim 41, wherein said porous polymeric membrane material comprises a polymeric material selected from the group consisting of polyolefins, polysulfones, polyvinyl chloride, polyvinyl fluoride, polytetrafluoroethylenepoly-propylene copolymer, polyamides, polyphenylene oxidi-polystyrenes and polycarbonates.

43. (Withdrawn) The microfibrous fuel cell structure of claim 41, wherein said porous polymeric membrane material comprises polypropylene.

44. (Withdrawn-Currently Amended) The microfibrous fuel cell structure of claim 36, wherein the carrier material comprises a liquid carrier material for hydrogen gas~~, and wherein said hydrogen supply structure further comprises a tubular membrane that encloses said liquid carrier material,~~ and wherein said tubular membrane is hydrogen-permeable but liquid-impermeable.

45. (Withdrawn) The microfibrous fuel cell structure of claim 44, wherein said liquid carrier material comprises at least one material selected from the group consisting of liquefied hydrogen, organic hydrogen solvents, and metal hydride solutions.

46. (Withdrawn) The microfibrous fuel cell structure of claim 44, wherein said liquid carrier material comprises a metal hydride solution, and wherein the tubular membrane of said hydrogen supply structure comprises an outer layer of a microporous, hydrophobic polymeric membrane material, and an inner layer of a hydrogen generation catalyst material in contact with the metal hydride solution.

47. (Withdrawn) A fuel cell assembly comprising multiple microfibrous fuel cell structures as in claim 36.

48. (Cancelled).

49. (New) The storage and dispensing system of claim 1 wherein the carrier is a metal hydride solution that generates the target gas upon contact with a catalyst and said gas permeable microtubular wall comprises said catalyst.

50. (New) The storage and dispensing system of claim 49 wherein the gas permeable microtubular wall is also liquid permeable and the system further comprises an inlet and an outlet for said metal hydride solution, the inlet being in fluid communication with the gas storage compartment and the outlet being in fluid communication with the gas collection compartment, whereby the target gas is generated concurrent with the passing of the metal hydride solution through the permeable microtubular wall.

Section III. (Remarks)

The claims have been amended in respect of the status identifiers of claims 31-34, 36, 41 and 44, to specify them with the status identifier "(Withdrawn-Currently Amended)."

It therefore is requested that the substantive examination of this application proceed, on the basis of such revised status identifier, and the substance of the prior response, which is set out below in its entirety for the sake of good order.

As of the May 26, 2006 Office Action, claims 1-47 were pending in the application, with claims 1-30 having been rejected and claims 31-47 withdrawn from consideration.

By this amendment and response, Applicants have amended paragraphs 75-77, 83-84, 95-96 and 148 of the specification, amended claims 1, 4, 7, 11, 12, 18, 31-34, 36, 41 and 44, cancelled claims 15 and 40, and added new claims 49 and 50, as set forth in Sections I and II hereof.

Upon entry of this amendment and response, the pending claims will be 1-14, 16-39, 41-47, 49 and 50, with claims 31-39 and 41-47 withdrawn from consideration.

The specification as now presented is in proper form, and the claims as amended/added and now pending in the application are patentable over the art of record. Allowance therefore is respectfully requested, in light of the following remarks

Amendments to the Specification

Paragraphs 75-77, 83-84, 95-96 and 148 have been amended solely to make the text thereof consistent with the drawings figures to which they refer. No new matter (35 USC 132) has been introduced as these are purely editorial corrections. Applicants therefore request that the amended paragraphs be entered into the specification.

Amendments to the Claims

As noted above, claims 1, 4, 7, 11, 12, 15, 18, 31-34 and 36 have been amended and new claims 49 and 50 added. No new matter (35 USC 132) has been introduced.

Claim 1 has been amended to more succinctly claim the embodiment of the present invention in which the microtubular membrane or wall is gas-permeable and the carrier for the gas is on one side of the membrane or wall with the collection chamber or passageway for the generated gas on the other[1].

As amended, independent claim 1 now recites:

> 1. A storage and dispensing system for storing and dispensing a target gas, comprising:
> (a) a housing comprising a gas collection compartment and a gas storage compartment;
> (b) a plurality of microtubular elements disposed in said housing i) having one or more open ends in fluid communication with either the gas collection compartment or the gas storage compartment and ii) extending from said compartment with which it is in fluid communication and into the other compartment, wherein each of said microtubular elements comprises a tubular wall permeable to the target gas and defining a bore side and a shell side; (c) a seal which, together with the tubular walls, sealingly isolates the gas collection compartment from the gas storage compartment; and
> (d) a carrier material for said target gas, wherein said carrier material is disposed in said gas storage compartment, which may be on either the bore sides or the shell sides of said microtubular elements.

Support for the amendments made is ample throughout the specification, drawings and claims as originally filed. For example, support for:

- the two compartments is found, e.g., in Figures 1, 3, 7, 8 and 12, original claim 18, and the appertaining text in the specification;
- the one or more tubular elements with open ends in fluid communication with a) the gas collection compartment is explicit from, e.g., the aforementioned Figures as well as Paragraphs 65 and 140, and b) the gas storage compartment is found, e.g., in Paragraphs 140-145 of the specification and in Figure 12;
- the seal is found, e.g., in Paragraphs 62-66.

No new matter has been entered.

Claims 4 and 12 have been amended to remove the "and/or" language appearing in such claims as previously pending, in order to avoid a possible future objection to such terminology.

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[1] No admission is made nor should any inference be drawn that other embodiments embraced by the claims as originally filed are not patentable.

Claims 7 and 18 have been amended for consistency with amended claim 1.

Claim 11 has been amended to correct its dependency.

Claims 31-34 have been amended to clarify that the catalyst may be in the form of a single microtubular element or a construction of a plurality of such elements having a gas permeable wall or membrane and a catalyst associated with that membrane.

Claims 36, 41 and 44 have been amended for consistency with Claim 1.

New claims 49 and 50 have been introduced to encompass alternative embodiments for the membrane, and such claims are fully supported by paragraphs 133-149 of the specification, and Figures 9, 10 and 12.

Election/Restriction Requirement

At page 2 of the May 26, 2006 Office Action, a restriction requirement has been imposed against claims 1-47, on the basis that such claims relate to the following distinct inventions:

I. Claims 1-30 drawn to a gas storage and dispending system

II. Claims 31-35 drawn to a hydrogen generation catalyst and

III. Claims 36-47 drawn to a fuel cell.

In the Office Action, it is alleged that Inventions I and II are related as combination and subcombination whereas Inventions I and III and Inventions II and III are said to be unrelated. It is further alleged that restriction is proper wherein light of their separate status in the art and the supposed need for different fields of search.

Pursuant to a telephone conversation with the undersigned attorney, a provisional election was made with traverse to prosecute the invention of the first group of claims, namely, claims 1-30 drawn to the gas storage and dispensing system. By this response, Applicants reaffirm the election of Invention I, now claims 1-14 and 16-30, with traverse.

In light of the amendments to the claims, it is clear that Inventions I and II, Inventions I and III and Inventions II and III are each related as combination and subcombination. Specifically, the hydrogen generation catalyst structure of Invention II is embraced as an element of or, in the case of certain dependent claims, is specifically required as an element of the hydrogen storage and dispensing system of Invention I or the microfibrous fuel cell structure of Invention III. Although the subcombination is not essential to all of the combinations embraced by the independent claims (claims 1 and 36), it is essential to a number of their dependent claims (e.g., claims 25, 29, 30, 46, 49 and 50) and, therefore, restriction is not proper.

Furthermore, inasmuch as claims 25, 29, 30, 49 and 50 are within Invention I and must be examined pursuant to the election made, examination of all claims would not create an additional burden since the same art would need to be searched.

For these reasons, Applicants respectfully request that the restriction requirement be withdrawn and all claims, as currently pending, be maintained under examination in the instant application.

Claim Rejections – 35 USC § 112

Claim 11 stands rejected under 35 USC §112, second paragraph, for failing to particularly point out and distinctly claim that which Applicants regard as their invention. Specifically, Claim 11 is said to be unclear as it is dependent upon itself.

By the foregoing amendment, Applicants have amended claim 11 to be dependent on claim 10. For such reason, the rejection is now moot. Applicants therefore respectfully request that the rejection be withdrawn.

Claim Rejections – 35 USC § 102(b) – Shapovalov et. al (US2002/0069929)

Claims 1-7 stand rejected under 35 USC 102(b) as being anticipated by Shapovalov et. al. Shapovalov et. al. has been cited as teaching a target gas storage and dispensing system comprising 1) a housing, 2) a plurality of microtubular elements disposed in the housing, each microtubular element comprising a gas impermeable tubular wall defining a bore side and a shell side, and wherein the bore side is sealed from the shell side, and 3) a carrier material for the target gas disposed in the housing at the bore side of the

microtubular elements and comprising a physical sorbent material made of an amorphous metal composition having sorptive affinity for the target gas.

Applicants respectfully traverse the rejection and request reconsideration.

"Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." ***W.L. Gore & Assocs. v. Garlock***, 721, F.2d 1540, 220 USPQ 303 at 313 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). It is not enough that the prior art reference disclose all the claimed elements in isolation. Rather, "anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim." ***Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.***, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added). Further, "[u]nder 35 U.S.C. § 102, anticipation requires that ... the prior art reference must be enabling, thus placing the allegedly disclosed matter in the possession of the public." ***Akzo, N.V. v. United States Int'l Trade Comm'n***, 808 F.2d 1471, 1 USPQ2d 1241, 1245 (Fed. Cir. 1986).

Shapovalov et. al. disclose an apparatus and method for the storage of compressed gas wherein the housing incorporates a plurality of "gas tight cells," each connected by a common collector, whereby the breach of one or more cells will avoid a catastrophic failure of the housing as a whole and confine the violent expulsion of the compressed gas to those cells that are breached. The gas in the remaining cells is restricted in its escape by the pathway(s) within and from those cells to the breach. In a preferred embodiment, the apparatus further includes a closure means which isolates and seals the breached cells from the unbreached cells in the event of a breach.

Unlike the apparatus of the present invention, Shapovalov et. al. does not comprise gas permeable cells or microtubular elements wherein the target gas is stored on one side of the cell/microtubular walls and collected for distribution on the other. Instead, Shapovalov et. al. teach gas storage units in the form of cells having high pressure resistant, gas impermeable walls so that the breach of one cell will not allow for the release or uncontrolled release of gas from the others.

Furthermore, contrary to the assertion of the Office, Shapovalov et. al. do not employ a carrier material, and certainly do not employ a "physical sorbent material" disposed in the housing at the bore side of the microtubular elements. The porous materials referred to in the cited paragraphs of Shapovalov et. al. are what comprise the cell walls themselves and which, in the course of their formation, create an

interconnected network of voids or pores that serve as the storage cells for the compressed gas. There is no sorptive material within these pores, voids or cells; rather the cells are open cells in which the compressed gas resides.

Inasmuch as Shapovalov et. al. fails to disclose, suggest or provide any derivative basis for at least two of the required elements of the apparatus of Claims 1-7, namely, gas permeable walls and a carrier material, there is no anticipation and, therefore, the rejection under 35 USC 102(b) is requested to be withdrawn.

Claim Rejections – 35 USC § 103(a) – Shapovalov et. al in view of Suda (US 6358488)

Claims 8 and 9 stand rejected under 35 USC 103(a) as being unpatentable over Shapovalov et. al. in view of Suda. Shapovalov et. al is cited for the reasons previously discussed. It is acknowledged that Shapovalov et. al. do not teach a liquid carrier material comprising at least one material selected from the group consisting of liquefied hydrogen, organic hydrogen solvents, and metal hydride solutions. Suda is said to disclose a liquid carrier material comprising a metal hydride solution such as sodium borohydride. It is alleged that it would have been obvious to one of ordinary skill in the art to modify the Shapovalov et. al. storage and dispensing system to include a liquid carrier material comprising sodium borohydride because generating hydrogen gas from sodium borohydride solution is safe and easily controlled.

Applicants respectfully traverse the rejection and request reconsideration.

A *prima facie* case of obviousness requires a showing of some suggestion or motivation to modify the reference and/or combine the reference teachings, of a reasonable expectation of success in doing so, and the reference(s) must teach or suggest all the claim limitations. MPEP 2142 and 2143. Furthermore, it is well established that if a proposed modification of the prior art would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification (MPEP 2143.01(V)).

As noted above, Shapovalov et. al. teach a compressed gas storage unit comprising a plurality of gas tight cells. Suda et. al. teach a method for generating hydrogen gas efficiently and at high yield at a readily controllable rate without any danger of explosion. The method of Suda et al. comprises bringing into contact certain aqueous alkaline solutions of a metal hydrogen complex and specific metal or hydrogen absorbing alloy catalysts. The solutions are stable and only reactive upon contact with the catalyst material (Suda et al., column 4, lines 13-22). Hydrogen generation is then initiated by adding the catalyst

to the solution or by passing the solution by or through the catalyst (Suda et al., column 5, lines 26-34). Control of the rate of gas generation is effected by altering the concentration and controlling the rate of addition of one to the other. Though Suda et al. teaches a method of production, it does not provide any clear or definitive teaching or suggestion as to an appropriate apparatus for containing this method, and certainly does not speak of incorporating the same into a unitary gas storage apparatus, let alone one comprising a plurality of microtubular elements.

The Office suggests that it would be obvious to add the components of the Suda et al. method to the cells of the Shapovalov et. al. apparatus. As noted above, Shapovalov et. al. do not teach gas permeable cells or carrier materials, and especially does not teach a carrier material on the opposite side of a gas permeable cell wall from a gas collection means. Since Suda provides no guidance as to a suitable apparatus for containing its method and Shapovalov et. al. do not teach or suggest the Applicants' claimed apparatus, the theorized combination does not suggest that claimed apparatus.

Furthermore, the proposed combination would be impractical, if not impossible. Even if one were to add the solutions of Suda et al. to the cells of Shapovalov et. al., one is still left without the catalysts that Suda et al. teach as being critical to the generation of hydrogen gas. Certainly one could not add it to the cells together with the solution, since there would be uncontrolled hydrogen gas generation.

Nothing in either Shapovalov et. al. or Suda would suggest how to add the catalyst to each cell without compromising the integrity of each cell and, consequently, defeating the very objective of Shapovalov et. al.

Accordingly, the combination of Shapovalov et al. and Suda et al. provides no derivative basis for the claimed invention of claims 8 and 9. It therefore is requested that the rejection of claims 8 and 9 be withdrawn.

Claim Rejections – 35 USC § 103(a) – Shapovalov et. al in view of Masada et. al. (US2002/0056370)

Claims 10-15 stand rejected under 35 USC 103(a) as being unpatentable over Shapovalov et. al. in view of Masada et. al. Shapovalov et. al is cited for the reasons discussed hereinabove. It is acknowledged that Shapovalov et. al. do not teach a carrier material that is disposed at the shell sides of the microtubular element and that the cell walls are permeable to the target gas. However, Masada et. al. is

said to disclose a carrier material that is at the shell sides of the microtubular elements and tubular walls that are gas permeable. It is alleged that it would have been obvious to one of ordinary skill in the art to modify the Shapovalov et. al. storage and dispensing system to include a carrier material at the shell side of the cell walls and to employ gas permeable cell walls to maximize the total volume of hydrogen absorbed and released by the carrier materials.

Applicants respectfully traverse the rejection and request reconsideration.

As noted above, a *prima facie* case of obviousness requires a showing of some suggestion or motivation to modify the reference and/or combine the reference teachings, of a reasonable expectation of success in doing so, and the reference(s) must teach or suggest all the claim limitations. MPEP 2142 and 2143. Furthermore, it is well established that if a proposed modification of the prior art would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification (MPEP 2143.01(V)).

The Office has suggested substituting a permeable cell wall for the impermeable walls of Shapovalov et. al. and depositing on the shell sides of such walls a carrier material for the target gas. However, such a construction would be at complete odds with and void the very teaching and objective of Shapovalov et. al.

As noted above, Shapovalov et. al. teach an apparatus in which the compressed gas is held in individual cells having high pressure resistant and gas impermeable walls. This construction allows for the breach of one or more cells without a catastrophic failure and/or subsequent release of the gas contained in the remaining cells. Were the gas to be stored outside of the cells and the walls of the cells to be gas permeable, a breach of the housing would result in the catastrophic loss of gas from the whole of the apparatus. Thus, clearly, the combination of Shapovalov et. al. and Masada et. al. is neither possible nor appropriate. Consequently, no derivative basis exists in Shapovalov et al. and Masada et al. for the Applicants' claimed invention. It therefore is requested that the rejection of claims 10-15 be withdrawn.

Claim Rejections – 35 USC § 103(a) – Shapovalov et. al in view of Masada et. al. further in view of Suda

Claims 16-18, 22-26 and 29-30 stand rejected under 35 USC 103(a) as being unpatentable over Shapovalov et. al. in view of Masada et. al. as applied to claims 10-15 above and further in view of Suda

et al. In addition to the arguments and statements made with respect to each reference above, Shapovalov et. al is further cited as teaching microtubular elements that are potted at one end by potting member "4" so that the bore sides of the microtubes are sealed from the shell sides in a leak tight manner, and wherein the potting member divides the volume of the housing into a compartment for holding the carrier material and a compartment for hydrogen collection in a leak tight manner, and wherein the microtubes extend from the former into the latter in such a way that the shell sides of the microtubular elements at least partially contact the carrier material and the bore sides are in fluid communication with the collection compartment and wherein the housing further comprises a hydrogen outlet for dispensing the hydrogen gas.

It is acknowledged that Shapovalov et. al. and Masada et. al. do not teach a liquid carrier material comprising at least one material selected from the group consisting of liquefied hydrogen, organic hydrogen solvents, and metal hydride solutions nor, specifically, the metal hydride solutions of Applicants' claimed invention in combination with a suitable catalyst-based or pH-based hydrogen release control mechanism or a catalysts associated with the walls of the microtubular elements.

However, Suda is said to disclose a liquid carrier material comprising a metal hydride solution such as sodium borohydride, within Applicant's ranges, in combination with a suitable catalyst-based or pH-based hydrogen release control mechanism or a catalyst associated with the walls of the microtubular elements. It is alleged that it would have been obvious to one of ordinary skill in the art to modify the Shapovalov et. al. storage and dispensing system to include the hydrogen gas generating method of Suda in order to safely and easily generate hydrogen gas from a liquid carrier material.

Applicants respectfully traverse the rejection and request reconsideration. As noted above, neither the combination of Shapovalov et. al. with Suda nor the combination of Shapovalov et. al. with Masada et. al. is appropriate. The combination of all three is equally defective. As previously discussed, nothing in Shapovalov et. al. or Suda suggests or teaches how one could preserve the essence of Shapovalov et. al. while accommodating the method of Suda et al. Indeed, it would seem to be impossible to combine the teachings as suggested. Similarly, any attempt to modify Shapovalov et. al. to accommodate Masada et. al. would defeat the very essence of the former, rendering it ineffective for its intended purpose.

Applicants acknowledge the seal member "4" of Shapovalov et. al. but that is not a potting material and, furthermore, does not operate as suggested by the Office. The seal member "4" is a gasket type

arrangement that allows the gas within the microtubular elements/cells to flow from the cell to the collection chamber but not from the collection chamber (as defined by the Office, i.e., that area above the gasket "4") to individual cells. Specifically, as shown in Figure 5 of Shapovalov et. al., in the event of a breach of one or more cells, the gas flowing from the remaining cells into the collection chamber creates a back-pressure on the gasket, forcing it against the passage/opening from the breached cells to the collection chamber, thereby sealing it in a leak-tight fashion. If the gasket were a true potting material forming a permanent leak-tight seal, it would not allow for the flow of the gas from the cells to the collection chamber, thereby rendering the apparatus as a whole useless.

Furthermore, the combined system would lack microtubular elements or cells having gas permeable walls as required by the claims of the present application.

For all these reasons, it is clear that the combined teachings do not establish a case of prima facie obviousness. Thus, the rejection of claims 16-18, 22-26 and 29-30 should be withdrawn and such action is respectfully requested.

Claim Rejections – 35 USC § 103(a) – Shapovalov et. al in view of Masada et. al. and Suda further in view of Holland et. al. (US 6358488)

Claims 19-21 stand rejected under 35 USC 103(a) as being unpatentable over Shapovalov et. al. in view of Masada et. al. and Suda as applied to claims 16-18, 22-26 and 29-30 above, and further in view of Holland et. al. It is acknowledged that the references do not expressly teach microtubular elements whose walls are a) gas permeable but liquid impermeable, b) a microporous hydrophobic material or c) comprise multiple layers one of which is gas and liquid permeable and the other gas permeable and liquid impermeable. Holland et. al. is cited as teaching a hydrogen separation membrane comprising a microporous hydrophilic polymer that is gas permeable but liquid impermeable It is contended that it would have been obvious to one of ordinary skill in the art to modify the Shapovalov et. al. storage and dispensing system to include microtubular walls comprising a hydrogen separation membrane comprising a microporous hydrophilic polymer that is gas permeable but liquid impermeable or a composite membrane that comprises a gas and liquid permeable layer and a gas permeable, liquid impermeable layer in order to efficiently generate hydrogen gas from a liquid carrier material.

Applicants respectfully traverse the rejection and request reconsideration.

As noted in the prior section, the teachings of Shapovalov et. al., Suda, and Masada et. al., to the extent they are even combinable, which Applicants contend they are not, fails to yield a valid or operable gas storage and dispensing system. Inasmuch as the gas storage and dispensing system that is supposed to be modified by the further teachings of Holland et. al. is non-existent and/or not enabled, the further combination with Holland et. al. is similarly non-enabling. Specifically, one cannot modify that which has yet to be created. Consequently, the rejection of claims 19-21 over Shapovalov et. al. in view of Masada et. al. and Suda further in view of Holland et. al. likewise fails.

Further, it is to be noted that Holland et. al. is directed to an in-line fuel processing apparatus and system for generating hydrogen gas from hydrocarbon fuels. There is no suggestion or inference nor is there any motivation to look to a fuel processing system for purposes of selectively taking one element thereof for use in a gas storage and dispensing system.

Additionally, contrary to the assertion of the Office, column 8, lines 55-67 of Holland et. al. does not specifically teach hydrogen separation membranes that are gas permeable but liquid impermeable or that comprise a gas and liquid permeable layer and a gas permeable, liquid impermeable layer, and certainly does not teach them in association with a hydrogen storage system wherein the hydrogen is stored in a liquid carrier in a liquid compartment that is isolated from the hydrogen collector compartment by the gas permeable membrane.

Indeed, nothing specifically states or suggests that the Holland et. al. membranes are not liquid permeable. All that is said relative to the performance of the membrane employed in Holland et. al. is that it is selective for hydrogen and separates hydrogen gas from the reformate: a gas mixture.

Furthermore, while Holland et. al. teach various materials for preparing their membranes, they preferentially direct one to metal membranes, a teaching that is directly contradictory to Masada et al., who repeatedly teach away from and call for the specific exclusion of metal fibers (see Masada et. al. paragraphs 0015, 0021 and 0022) in making its permeable membrane.

Thus, Holland et. al., in failing to teach that which it is cited for as well as in teaching in a manner contradictory to one of the key secondary references, does not make obvious the use of gas permeable and liquid impermeable membranes and certainly does not suggest compound membranes having a gas

and liquid permeable layer and a gas permeable, liquid impermeable layer in gas storage systems, let alone a gas storage system even remotely similar to that claimed by Applicants. Accordingly, the rejection of claims 19-21 in light of the cited references further in view of Holland et. al. fails and such rejection is therefore respectfully requested to be withdrawn.

Claim Rejections – 35 USC § 103(a) – Shapovalov et. al in view of Masada et. al. and Suda further in view of Gottesfeld (US 2003/0031907)

Finally, Claims 27 and 28 stand rejected under 35 USC 103(a) as being unpatentable over Shapovalov et. al. in view of Masada et. al. and Suda as applied to claims 16-18, 22-26 and 29-30 above, and further in view of Gottesfeld.

It is acknowledged that the references do not expressly teach a hydrogen fuel cell assembly comprising a water management mechanism for removing water generated during the electrochemical reaction from the fuel cell assembly and adding it to the liquid compartment of the claim hydrogen storage device. However, Gottesfeld is said to teach a hydrogen fuel cell assembly comprising a water management mechanism.

According to the Office, it would have been obvious and one of skill in the art would have been motivated to modify the Shapovalov et. al. storage device and dispensing system to replace the mixing chamber of the Gottesfeld fuel cell system so that the water supply of the storage and dispensing system is connected to the water management mechanism of the fuel cell system so that water generated by the fuel cell system is controllably added to the liquid compartment of the storage and dispensing system in order to utilize the Shapovalov et. al. storage and dispensing system in a practical application and efficiently manage the water generated by the fuel cell system.

Applicants respectfully traverse the rejection and request reconsideration. As noted previously, the supposed combination and alleged teachings of Shapovalov et. al., Suda, and Masada et. al., to the extent they are even combinable, which Applicants contend they are not, fail to yield a valid or operable gas storage and dispensing system. Inasmuch as the gas storage and dispensing system which is supposed to be modified by the further teachings of Gottesfeld is non-existent and/or not enabled, the further combination with Gottesfeld is similarly non-enabling. Specifically, one cannot modify that which has yet to be created. Consequently, the rejection of claims 27 and 28 over Shapovalov et. al. in view of Masada et. al. and Suda, further in view of Gottesfeld, likewise fails.

Further, and contrary to the assertion of the Patent Office, it is noted that Gottesfeld is directed to an apparatus and method for driving fluids in a fuel cell and, more particularly, for moving fluids, specifically water, fuel, a fuel mixture and liquid effluent, in a direct methanol fuel cell system using self-generated pressure differentials. Nowhere is there any suggest or mention of hydrogen gas or a hydrogen fuel system. The Office is suggesting that one take a concept from a completely non-analogous system and apply it to Applicants' system in such a way as to obtain the specific objectives and construction as disclosed and claimed by Applicants, but fails to provide any guidance or motivation in either reference of how one gets from one to the other.

Indeed, the Office even fails to provide any basis by which one would look to a fuel cell system that operates by way of the direct oxidation of organic liquid fuels, for elements and modifications to incorporate into a hydrogen fuel cell system, let alone the selection of a specific element that, in the reference, operates in conjunction with other elements/components not pertinent to the presently claimed system.

It therefore is clear that the cited references fail to make obvious the Applicants' invention, as claimed in claims 27 and 28, and it correspondingly is requested that the rejection of such claims be withdrawn.

Added Claim Fees

By this amendment, two dependent claims have been cancelled and two new dependent claims added. Consequently, there is no net increase in the number of claims pending versus those for which payment has previously been made and therefore no added claim fees are due.

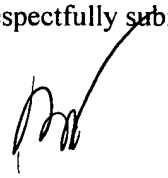
Conclusion

Applicants have fully addressed and rebutted each of the rejections set forth in the May 26, 2006 Office Action. The claims as amended/added and currently pending, including the withdrawn claims, embody subject matter that is patentable over the art of record. Applicants respectfully request that such claims be passed to allowance and that a Notice of Allowance be issued in proper course.

Concurrent furnishing of copy of this response to Commissioner John Doll.

In consequence in the unnecessary effort that has resulted from the U.S.P.T.O. error in this matter, a copy of this response is being furnished to the Office of the Commissioner, with a request that the Commissioner take such action as is appropriate in the circumstances to ensure that there is a non-recurrence of the action which has befallen the applicant in this case. Specifically, the Legal Instrument Examiner who issued the September 5, 2006 Notice should be fully educated as to the applicable provisions of 37 C.F.R. 1.121 and MPEP 714.

Respectfully submitted,



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Enclosures:
Appendix A – Copy of September 10, 2006 Demand for Rescission [7 pgs.]

APPENDIX A

O:Auto-reply fax to 9194199354 COMPANY:

Auto-Reply Facsimile Transmission

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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re United States Patent Application of:		Docket No.:	4172-121
Applicant:	Ray R. Eshraghi et al.	Examiner:	Chuo, Tony S.H.
Application No.:	10/767,107	Art Unit:	1746
Date Filed:	January 28, 2004	Confirm. No.:	4423
Title:	HYDROGEN STORAGE SYSTEMS AND FUEL CELL SYSTEMS WITH HDYROGEN STORAGE CAPACITY	Customer No.:	23448

FACSIMILE TRANSMISSION CERTIFICATE
ATTN: Examiner Tony S.H. CHUO
Fax No. (571) 273-8300

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Steven I. Hultquist

September 10, 2006
Date

DEMAND FOR IMMEDIATE RESCISSION OF IMPROPER SEPTEMBER 5, 2006 NOTICE OF NON-COMPLIANT AMENDMENT, AS ISSUED BY THE USPTO IN DISREGARD OF THE REQUIREMENTS OF 37 CFR 1.121 AND MPEP 714

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Number of Pages (including cover)

Steven J. Hultquist

September 10, 2006
Date

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Abbreviations:

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WS: Waiting send	MS: Mailbox save	FA: Fail	RP: Report	EC: Error Correct

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Applicant:	**Ray R. Eshraghi et al.**	**Examiner:**	**Chuo, Tony S.H.**
Application No.:	**10/767,107**	**Art Unit:**	**1746**
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ATTN: Examiner Tony S.H. CHUO
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Steven J. Hultquist

September 10, 2006
Date

DEMAND FOR IMMEDIATE RESCISSION OF IMPROPER SEPTEMBER 5, 2006 NOTICE OF NON-COMPLIANT AMENDMENT, AS ISSUED BY THE USPTO IN DISREGARD OF THE REQUIREMENTS OF 37 CFR 1.121 AND MPEP 714

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Request is hereby made for immediate rescission of the September 5, 2006 Notice of Non-Compliant Amendment, as improperly issued by the USPTO Legal Instruments Examiner who reviewed applicants' Amendment filed August 28, 2006 in response to the May 26, 2006 Office Action.

The Legal Instruments Examiner declared in the September 5, 2006 Notice of Non-Compliant Amendment that the August 28, 2006 Amendment was non-compliant for the reason stated in Paragraph 4.E. of the Notice that "[W]ithdrawn claims 31-34, 36, 41 and 44 status identifier is improper because of markings."

The Legal Instruments Examiner in this instance is in error and has failed to observe the provisions of 37 CFR 1.121 and MPEP 714. The "markings" (amendments) by the undersigned attorney were fully consistent with the status identifier of "(Withdrawn)" and such status identifier is fully proper.

Claims 31-47 were withdrawn pursuant to a restriction requirement in the May 26, 2006 Office Action. The applicants in their August 28, 2006 Amendment argued against such withdrawal, but properly indicated "(Withdrawn)" as the status identifier for all such claims 31-47. Applicants amended withdrawn claims 31-34, 36, 41 and 44, **and the status identifier "(Withdrawn)" is fully appropriate for such claims, consistent with the requirements of 37 CFR 1.121 and MPEP 714**.

37 CFR 1.121 provides in paragraph (c) as follows:

(c) *Claims*. Amendments to a claim must be made by rewriting the entire claim with all changes (*e.g.*, additions and deletions) as indicated in this subsection, except when the claim is being canceled. Each amendment document that includes a change to an existing claim, cancellation of an existing claim or addition of a new claim, must include a complete listing of all claims ever presented, including the text of all pending and withdrawn claims, in the application. The claim listing, including the text of the claims, in the amendment document will serve to replace all prior versions of the claims, in the application. **In the claim listing, the status of every claim must be indicated after its claim number by using one of the following identifiers in a parenthetical expression: (Original), (Currently amended), (Canceled), (Withdrawn), (Previously presented), (New), and (Not entered).** ....

(2) *When claim text with markings is required.* All claims being currently amended in an amendment paper shall be presented in the claim listing, indicate a status of "currently amended," and be submitted with markings to indicate the changes that have been made relative to the immediate prior version of the claims. The text of any added subject matter must be shown by underlining the added text. The text of any deleted matter must be shown by strike-through except that double brackets placed before and after the deleted characters may be used to show deletion of five or fewer consecutive characters. The text of any deleted subject matter must be shown by being placed within double brackets if strike-through cannot be easily perceived. **Only claims having the status of "currently amended," or "withdrawn" if also**

being amended, shall include markings. If a withdrawn claim is currently amended, its status in the claim listing may be identified as "withdrawn-currently amended."

It therefore is apparent that (i) "withdrawn" claims can be amended, and (ii) such claims optionally can be but are not required ("**may be identified**...") to indicate the amended status.

Thus, an amended withdrawn claim can be labeled with either "(withdrawn)" or "(withdrawn-currently amended)." Either is fully proper.

The **MPEP** in **Section 714 C.(A)** is consistent with the above, in instructing that

"[F]or any amendment being filed in response to a restriction or election of species requirement and any subsequent amendment, **any claims which are non-elected must have the status identifier (withdrawn). Any non-elected claims which are being amended must have either the status identifier (withdrawn) or (withdrawn - currently amended) and the text of the non-elected claims must be presented with markings to indicate the changes**." (emphasis added)

See also **MPEP Section 714 C.(E)**, which discusses alternative status identifiers:

"E) **Acceptable Alternative Status Identifiers**: To prevent delays in prosecution, the Office will waive certain provisions of 37 CFR **1.121** and accept alternative status identifiers not specifically set forth in 37 CFR **1.121©**. See *Acceptance of Certain Non-Compliant Amendments Under 37 CFR 1.121©*, O.G. (July 5, 2005). Accordingly claim listings that include alternative status identifiers as set forth below may be accepted if the amendment otherwise complies with 37 CFR **1.121**.

Status Identifiers Set Forth in 37 CFR 1.121 ©	Acceptable Alternatives
1. Original	Original Claim; and Originally Filed Claim
2. Currently amended	Presently amended; and Currently amended claim
3. Canceled	Canceled without prejudice; Cancel; Canceled; Canceled herein; Previously canceled; Canceled claim; and Deleted
4. Withdrawn	**Withdrawn from consideration; Withdrawn – new; Withdrawn claim; and Withdrawn – currently amended**
5. Previously presented	Previously amended; Previously added; Previously submitted; and Previously presented claim
6. New	Newly added; and New claim
7. Not entered	Not entered claim

[emphasis added]."

It therefore is amply clear that "Withdrawn" is a fully proper and appropriate status identifier for a claim that although withdrawn has been amended.

The Legal Instruments Examiner therefore is requested to take cognizance of the foregoing remarks, the specific applicable provisions of the Code of Federal Regulations and the MPEP provisions promulgated thereunder, and to immediately withdraw the Notice of Non-Compliant Amendment in order to correct the USPTO error in the issuance of the September 5, 2006 Notice.

Respectfully submitted,

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